Met Office

NEWS

Met Office to host Europe's largest Arm supercomputer

Author: Press Office
15:11 (UTC) on Thu 20 Feb 2020

The Met Office, together with the region's leading universities, Hewlett Packard Enterprise (HPE), and partners, have been awarded £4.1m to create Isambard 2.

The funding from the Engineering and Physical Sciences Research Council (EPSRC) will create the largest Arm-based supercomputer in Europe.

The powerful new £6.5m facility, to be hosted by the Met Office in Exeter and utilised by the universities of Bath, Bristol, Cardiff and Exeter, the GW4 Alliance, will double the size of GW4 Isambard, to 21,504 high performance cores and 336 nodes.

Isambard 2 will also incorporate the latest novel technologies from HPE and new partner Fujitsu, including next-generation Arm CPUs in one of the world's first A64fx machines from Fujitsu.

With significantly increased efficiency, capacity and eight times more memory bandwidth, Fujitsu's A64fx Arm-based processor will push the frontiers of scientific research by supporting the development of powerful new algorithms, paving the way for sophisticated climate modelling and medical research.

Isambard has already been used to investigate potential drugs to treat osteoporosis and simulate Parkinson's disease at the molecular level. Isambard 2 will enable researchers to expand this further with the potential for scientific breakthroughs.

The Met Office will host Isambard 2 as it does currently with the Isambard 1 system. Isambard 2 will continue to support their efforts in developing future systems for weather forecasting and climate predictions.

With over 350 users from all over the world, Isambard is already one of the most widely used Tier 2 systems. Supercomputers can tackle large scale problems that would not be possible on other machines. With access to Isambard 2, researchers from across GW4 and beyond can choose the best hardware system for their specific scientific problem, saving time and money.

Professor Kim Graham, Chair of GW4 Board and Pro Vice-Chancellor for Research, Innovation and Enterprise at Cardiff University said: "We are proud to be part of this unique project and successful collaboration with HPE and its Cray technologies, the Met Office and our new partners. Isambard exemplifies our region's expertise in advanced engineering and digital innovation. We are excited to expand Isambard to retain our international lead in Arm expertise and enable researchers to further scientific discovery."

Dr Paul Selwood, Principal Fellow in Supercomputing at the Met Office said: "Isambard has been of great value to the Met Office, providing an excellent platform to develop our next generation weather and climate models. Isambard 2, by

providing access to the very latest technology such as the A64FX processor, will enable us to keep our code developments relevant to these exciting and novel hardware systems."

Professor Simon McIntosh-Smith, the principal investigator for the Isambard project and a professor of high-performance computing at the University of Bristol said: “We are looking forward to innovating and pushing the boundaries further with Isambard 2 and witnessing the tremendous performance that will come about on the Cray A64FX Arm supercomputer, utilising Fujitsu’s new processors. It’s crucial for UK scientists to have access to the latest cutting-edge Arm technologies, as they’re one of the most likely paths to Exascale computing and can help researchers solve global challenges.”

Dominik Ulmer, director of Technology Operations, HPC and AI, HPE said: "We are committed to delivering key Exascale Era technologies from the original Isambard 1 to its new generation with the Isambard 2 system. By collaborating with GW4 Alliance and extending our HPC and AI solutions, we are further advancing Arm-based supercomputing architectures for high sustained application performance and bolstering the overall Arm ecosystem.”

EPSRC Executive Chair Professor Dame Lynn Gladden said: “Computation is becoming an ever-more important scientific tool, be it for analysing large data sets generated from experimental work or modelling situations which can’t be replicated in experiments. The High Performance Computing services announced today will give researchers access to the tools they need to make breakthroughs in a wide range of fields that impact on how we live our lives.”

Isambard 2 also offer users the potential to run new advanced AI workloads, while also providing continued access to a world-class Arm system and the most distinctive Multi Architecture Comparison System (MACS) to meet future demand.

Met Office

© Crown Copyright